



## **CARBON MONOXIDE -- A COLORLESS, ODORLESS, TASTELESS AND DEADLY WINTER THREAT**

### **V Corps Safety Office release**

Carbon monoxide is colorless, odorless, tasteless ... and deadly.

What's more, it may be easier to be poisoned by carbon monoxide than many people think.

Most people know cars release carbon dioxide in their exhaust. But anything that burns fuel -- such as gas, oil, kerosene, liquefied petroleum (LP) gas, coal and wood -- can produce dangerous levels of carbon monoxide. This includes vehicles; fuel-fired furnaces or heaters; fireplaces and wood stoves; gas stoves; gas dryers; charcoal grills; lawnmowers and other garden equipment, and snow blowers.

When these devices are malfunctioning, poorly maintained or used improperly, they can be killers. According to the Journal of the American Medical Association, CO -- as carbon monoxide is known by its chemical composition -- is the leading cause of accidental poisoning deaths in America.

Enclosed and poorly ventilated areas are the most dangerous for CO poisoning. Because carbon monoxide is heavier than oxygen, it tends to sink

to the lowest portion of the space it is in, and eventually forcing the oxygen in the space to rise. Thus, the closer a person is to the ground, the greater the chance of CO poisoning.

CO kills by shutting down the bloodstream's ability to carry oxygen to body tissues and vital organs such as the heart and brain.

Because of the "invisibleness" of CO, it's vital to know the signs -- things people can see -- and symptoms -- things people feel -- of carbon monoxide poisoning.

The first signs of acute exposure to CO are normally tightness across the forehead, flushing and a pounding heart. The victim may also experience vertigo or become weak, dizzy, confused or irritable, and may pass out. Repeated exposure to CO may cause persistent loss of appetite, headaches, listlessness, dizziness and difficulty walking.

If a victim is exposed to a high concentration of carbon monoxide, he may pass out without feeling any symptoms. And because devices such as heaters can cause CO poisoning, it is particularly dangerous when these devices malfunction while the user is sleeping, when he will not know he is in danger.

To treat a victim of CO poisoning, do the following:

- Immediately get the victim into fresh air or get fresh air into the area by opening windows and doors.
- Turn off any combustion appliances to stop the flow of CO.
- Loosen the victim's clothing.

- Have the victim rest.
- Give the victim artificial respiration or cardio-pulmonary resuscitation (CPR) as appropriate.
- If oxygen is available, give it to the victim with a face mask.
- Seek medical attention immediately.

The symptoms of CO poisoning tend to disappear once a victim gets fresh air. However, if a victim has been "severely exposed" to CO, symptoms may occur days or even weeks later, even if the victim appears to have recovered. These delayed symptoms can include blurry vision or loss of sight; dizziness; profound changes in emotions and willpower, and depression.

Many victims of CO poisoning recover with treatment. However, in very severe cases victims may suffer permanent brain damage.

Avoiding carbon monoxide poisoning is relatively easy. It just takes some common sense and upkeep.

Here are some prevention pointers:

- Have fuel-burning appliances such as oil and gas furnaces; gas water heaters, dryers, ranges and ovens; gas or kerosene space heaters, and fireplaces and wood stoves inspected by a professional each year or at the start of every heating season. Make sure he checks for faulty equipment; blocked or damaged chimneys and flues; closed fresh make-up air returns; blocked return air registers, and inadequate ventilation.
- Buy appliances that vent fumes to the outdoors whenever possible.
- Read and follow the instructions for any fuel-burning device.

- If you use unvented gas or kerosene heaters, carefully follow the manufacturers' instructions and cautions. Use the proper fuel, open interior doors, and open a window a bit for proper ventilation and fuel-burning.
- Keep all fuel-burning devices properly maintained.
- Never use a gas oven or charcoal grill to heat your house, even for a short time.
- Never sleep in a room with an unvented gas or kerosene heater.
- Never use devices with gas-powered engines, such as mowers, weed trimmers, blowers, chain saws or generators in enclosed spaces.
- Don't ignore symptoms that may indicate CO poisoning, particularly if more than one person is feeling them.

Vehicles are a particular carbon monoxide risk. Some people believe that when they can smell exhaust fumes, the smell comes from the CO, but they're only detecting unburned hydrocarbons.

To stay safe from carbon monoxide poisoning from a vehicle:

- Be sure all parts of the manifold, exhaust pipe, and muffler are in good condition and sealed against leaks.
- Keep the engine properly tuned so that combustion will be as complete as possible.
- Never idle a vehicle in a garage, even if the garage door is open. Fumes can build up in the garage and house very quickly.
- Never crawl under a vehicle while the engine is running.
- Never drive without a fresh air supply coming into the vehicle.

-- Avoid following other vehicles too closely and drawing in their exhaust emissions -  
- including carbon monoxide.

-- Be alert for the symptoms of CO poisoning. There are some additional signs to watch for while driving at night: a sense that oncoming lights seem brighter and more glaring than usual; slowness in recovering vision from the glare of lights, and a feeling that the darkness seems blacker than usual.

-- Never sit in vehicles for long periods with the engine running and windows closed.

-- Never sleep in or near running vehicles.

-- Never use vehicle exhaust as a means of warming up.

-- When a vehicle is stranded during winter weather, the driver should make sure the windows are open slightly and that nothing -- such as snow or ice -- is blocking the vehicle exhaust. The engine and heater should only be run periodically as need to stay warm.

One last note: Even a vented heater in perfect running order can be dangerous in a tightly closed area, such as a room or tent. Fuel requires oxygen to burn, and can burn using less oxygen than humans need to survive. Areas with vented heaters must still be ventilated to avoid causing asphyxiation.

